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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,958	02/09/2004	Kwang-Ho Han	4591-374	1600

20575 7590 02/28/2007
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PORTLAND, OR 97204

EXAMINER

HERRERA, JENNIFER

ART UNIT	PAPER NUMBER
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3652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/775,958

Applicant(s)

HAN ET AL.

Examiner

Jennifer P. Herrera

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 7, 14 and 22 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12, 13, 15-17, 21 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-11 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/9/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The amendments filed on January 4, 2007 of the claims have been entered into record.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 11, and 18 rejected are under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Horr and further in view of Morgan.

a. Regarding claims 1 and 18, Shin teaches an apparatus and the associated method, susceptor, 20, composed of a lift pin assembly, 12, column 4, line 18, a plurality of guiding blocks, 22, around the edge of the susceptor in column 4, lines 24-25, and a guiding block transfer unit, column 4, lines 36-49. Shin does not teach the guiding block transfer unit moving collectively and radially. Horr teaches the collective and radial movement of the guiding block transfer unit in column 3, lines 1-13. Therefore it would have been obvious to a person having ordinary skill in the art to add the movement of Horr to the guide transfer block unit of Shin to automatically and evenly adjust the guide depending on the size of the wafer. Shin and Horr do not teach the transfer rod, and attachment assembly. Morgan teaches the transfer rod and attachment assembly for the guiding blocks in Figure 7, and explanation in column 4, lines

13-16. Therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention to add the transfer rod and attachment of Morgan to device of Shin and Horr to allow the guide block adjust depending of the size of substrate to be processed.

b. Regarding claim 11, Shin teaches the apparatus previously taught to be employed in a baking process during the fabricating of a semiconductor device in column 1, lines 16-19.

c. Regarding claim 18, Shin teaches the method of manufacturing a semiconductor device by:

- i. loading the substrate on the susceptor in column 5, lines 43-44,
- ii. providing a plurality of guiding blocks disposed around the edge of the susceptor in column 4, lines 24-26, and
- iii. positioning the substrate on the susceptor in column 4, lines 26-35.

2. Claims 2, 3, 6, 9, 10, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Horr in view of Morgan as applied to claims 1 and 18 above, and further in view of Cho.

a. Regarding claims 2, 3, and 19, Shin also teaches a plate, 20, and a spacer, 24. Shin, Horr, and Morgan do not teach guiding lanes. Cho teaches guiding lanes, 44, for the guiding blocks in column 4, lines 1-3 and 10-12. Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add the guiding lanes of Cho to the apparatus of Shin, Horr, and Morgan, to vary the positions of the guiding blocks. Having the ability

to change the distances of the guiding blocks via guiding lanes would expand the function of the apparatus to carry different substrates.

b. Regarding claims 6 and 20, Shin, Horr, and Morgan do not teach a plurality of positions for the guiding blocks. Cho teaches the guiding blocks, 40, moving a plurality of positions in column 4, lines 10-17. It would have been obvious to a person with ordinary skill in the art at the time the invention was made to add plural positions as taught by Cho to the apparatus of Shin, Horr, and Morgan, to optimize the mobility of the guiding blocks.

a. Regarding claim 9, Shin teaches a testing unit in column 6, lines 60-62. Shin, Horr, and Morgan do not teach guiding lanes and the ability to have a plurality of positions for the guiding blocks. Cho teaches the guiding lanes and plurality of positions in column 4, lines 1-3 and 10-17. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add the guiding lanes and plural positions as taught by Cho to the apparatus of Shin, Horr, and Morgan, to expand the diversity in correcting the position of the substrate. Having the mobility of the guiding blocks with a testing unit increases the function of the apparatus to secure the placement of the substrate.

b. Regarding claim 10, Shin, Morgan, and Cho does not teach a vacuum line, vacuum pump, and sensor. Horr teaches the vacuum pump, 28, vacuum line, 27, and sensor, 17, in column 3 lines 28-33 and lines 62-66, and column 4, lines 15-17. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a vacuum pump, line and sensor

as taught by Horr to the apparatus of Shin, Morgan, and Cho as the testing unit.

Having a vacuum-testing unit would allow the user to have an accurate reading of the position of the substrate.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Horr in view of Morgan in view of Cho as applied to claim 3 above, and further in view of Perlov. Shin, Horr, Morgan, and Cho do not teach a rotatable shaft, a plurality of supporting rods, and a plurality of transfer rods. Perlov teaches the shaft, supporting rods, and transfer rods in column 3, lines 25-28. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to add the rotating apparatus of Perlov to the device of Shin, Horr, Morgan, and Cho, to allow movement manipulation within the device to position the substrate.

Allowable Subject Matter

4. Claims 12, 13, 15-17, 21, and 23 are allowed.

5. Claims 5 and 8 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer P. Herrera whose telephone number is (571) 272-6269. The examiner can normally be reached on 0830-1700 hrs Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JPH
2/23/07



GENE O. CRAWFORD
SUPERVISORY PATENT EXAMINER